

REMARKS

Applicant has carefully reviewed the arguments presented in the Office Action and respectfully requests reconsideration of the claims in view of the remarks presented below.

Claims 1, 9-11, 20 and 27 were amended and claims 19 and 29 were canceled. Thus, claims 1-18, 20-28 and 30-33 are pending in the application.

Claims 1-2, 6-11, 14, 17-22 and 27-33 were rejected under 35 U.S.C. 102(b) as being anticipated by Wang et al (6,069,686). Applicant respectfully traverses these rejections.

Claim 1 was amended to add the subject matter of canceled claim 19, that is, to recite that the device includes a least one periodic refractive index perturbation disposed in the optical fiber at a location proximal to the distal end of the optical fiber for providing a measurement of a temperature effect upon the gap with the tube of the device. Wang neither teaches nor suggests such an arrangement. While Wang does discuss the need for temperature compensation, Wang only teaches "fabricating lead-in fiber 210, reflecting fiber 220, and hollow sleeve 230 of the same material or materials having the same coefficient of thermal expansion (CTE)." Nowhere does Wang describe any other method of temperature compensation. This is completely different from the claim arrangement in that the period perturbation present in the optical fiber provides a means for directly determining the effect of temperature on the device, eliminating the requirement that the optical fiber, capillary, tube and plug of the claimed device be made from the same material, or materials having the same CTE.

Additionally, whether Wang's device provides temperature compensation or not is not relevant to an anticipation analysis, since Wang simply does not teach each and every element of the device of amended claim 1. Further, there is not even a suggestion of using at least one periodic refractive index perturbation disposed in optical fiber to provide a measurement as claimed in amended claim 1. Moreover, the disclosure of Wang is instructive as to what one skilled in the art would consider in addressing the issue of temperature compensation. Wang clearly states that temperature compensation is necessary, thus identifying the problem. However, Wang's solution is to simply insure that the components of his sensor are fabricated from the same materials, or at least materials having the same CTE, or by adjusting the dimensions of the gap or by adjusting the nominal fluid or gas pressure within the gap. Nowhere is there even a hint of including a periodic perturbation in the optical fiber. One skilled in the art would simply not read Wang and, based on Wang's disclosure, immediately obtain the novel

device of Applicant's claimed in claim 1. For these reasons, Applicant respectfully submits that claims 1-18 are novel and not obvious in view of the cited art, and thus requests that the rejections be withdrawn and the claims allowed.

Claim 20 was amended to correct several inadvertent typographical errors. No new matter was added. While claim 20 was also rejected as indicated above as being anticipated by Wang, the rejection should be withdrawn because Wang does not disclose each and every element of claim 20. Wang does not teach or even suggest in the specification, drawings or claims of that reference, a pressure sensor including a housing such as is claimed in claim 20. Further, the Examiner fails to point to any disclosure within Wang, or any other reference, that teaches or suggest such a housing. Thus, Applicant respectfully submits that claim 20, or any of the claims dependent therefrom, are anticipated by, or rendered obvious in view of, the teachings of Wang. Accordingly, Applicant requests that the rejection be withdrawn and the claims allowed.

Claim 27 has been amended to recite that the analyzing means is configured to determine a width of a gap in the Fabry-Perot optical cavity from the distance between two interference fringes within the cavity and to determine a pressure value from the width of the gap. Nowhere does Wang teach or even suggest such an analyzing means.

In contrast to the novel analyzing means recited by Applicant, Wang's analyzing means described at Col. 4, lines 40-44 and particularly at relies on a power detector to determine a ratio of energies or optical powers of the spectrum 320 and the partial spectrum 350" to provide a measure of temperature or pressure. The measurement of power and determination of the ratio of powers also require the careful selection of the gap of Wang's device, as is set forth in the extensive discussion within Wang of the need to carefully fabricate the width of the air gap, (See, Col. 7, ll. 12-65) since an improper width of the gap could limit the accuracy of Wang's device. Applicant's claimed device, in contrast, relies on determining the width of the gap from at least two fringes detected within the gap to determine a pressure value from the width of the gap.

The claimed method improves over Wang's power method in that it more directly measures the width of the gap, and using the determined width of the gap to provide a pressure value, rather than inferring such a value from a power ration. Moreover, while Wang does mention fringe counting and phase tracking, Applicant's invention uses neither of these technologies; rather Applicant's claim 20 determines the width of the cavity from a distance

determined between two fringes. For these reasons, Applicant believes that amended claim 27 is neither anticipated by, nor obvious in view of, the cited art and is thus patentable. Applicant respectfully requests that the rejections be withdrawn, and that claim 27, and the claims dependent therefrom, be allowed.

CONCLUSION

Applicant has carefully reviewed the arguments presented in the Office Action and respectfully requests reconsideration of the claims in view of the remarks presented. In light of the above amendments and remarks, Applicant respectfully requests that a timely Notice of Allowance be issued in this case.

Should the Examiner have any questions concerning the above amendments and arguments, or any suggestions for further amending the claims to obtain allowance, Applicant requests that the Examiner contact Applicant's attorney, John Fitzgerald, at 310-242-2667.

The Commissioner is authorized to credit any overpayment or charge any additional fees in this matter to our Deposit Account No. 06-2425.

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Respectfully submitted,

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